

Please amend the abstract as follows:

An apparatus is provided for quantitatively measuring combinations of magnetic particles combined with analytes samples whose amount or other characteristic quality is to be determined. The samples are arranged in a predefined pattern and magnetic particles are complexed with the analytes to be determined and are excited in a magnetic field. The magnetizations of the magnetic particles are thereby caused to oscillate at the excitation frequency in the manner of a dipole to create their own fields. These fields are inductively coupled to at least one substantially flat sensor such as sensing coils fabricated in a gradiometer configuration. The output signals from the sensing coils are appropriately amplified and processed to provide useful output indications.